

REMARKS

Title

The Examiner has objected to the Title of the Invention as not being descriptive. Applicant submits herewith an amended Title of the Invention that is clearly indicative of the invention to which the claims are directed.

Claim Rejections 35 U.S.C. § 102 (a)

The Examiner has rejected claims 8 – 14 under 35 U.S.C. §102 (a) as being anticipated by Ramaswami (US 5,783,475) or Matsumoto et al. (US 5,726,479). The Examiner refers to Figure 6 of Ramaswami or Figure 1 – 10 (f) of Matsumoto et al.. It is the Examiner's position that Ramaswami discloses a gate electrode formed on a substrate comprising,

- an insulative layer (33) formed on a substrate (31);
- a gate layer (32) formed on the insulative layer;
- a conductive layer (46) formed on the gate layer;
- thin first spacers (48) formed adjacent to opposite sides of the gate layer wherein the thin first spacers are recessed;
- thick second spacers (36) formed adjacent to each of the thin first spacers wherein the thick second spacers are recessed;
- wherein the insulative layer is an oxide;
- wherein the gate layer is a polysilicon;
- wherein the conductive layer is a polycide;
- wherein the thin first spacers are an oxide;
- wherein the thick second spacers are a nitride;

wherein the polycide is titanium salicide (TiSi₂).

The gate electrode of Applicant's claim 8, as amended, is not anticipated by Ramaswami or Matsumoto et al.

The tops of the thin first spacers 330 in the gate electrode of Applicant's claim 1 are at approximately the same height as the top of the gate layer 320. The tops of the thick second spacers 340 are also at approximately the same height as the top of the gate layer 320. Furthermore, the thick second spacers 340 have a flat upper surface. Consequently, a conductive layer 360 disposed on the gate layer 320 will extend beyond the edges of the gate layer 320 over the thin first spacers 330. See Figure 3I.

In contrast, the tops of the thin first spacers 48 in the gate electrode of Ramaswami are higher than the top of the gate layer 32. The tops of the thick second spacers 36 are also higher than the top of the gate layer 32. As a result, the conductive layer 46 cannot extend beyond the edges of the gate layer 32. See Figure 6. Constraining or stressing a conductive layer 46 will increase the resistance undesirably.

The tops of the thin spacers 5 in the gate electrode of Matsumoto et al., as shown in Figures 1/2(f)/7/8/9/10(f), are lower than the top of the gate layer 4a. The tops of the thick spacers 7a/7b/7 are also lower than the top of the gate layer 4a. As a result, the conductive layer 9a covering the top of the gate layer 4a also wraps around the upper corners of the gate layer 4a.

The tops of the thin spacers in the gate electrode of Matsumoto et al., as shown in Figures 5/6(f), are higher than the top of the gate layer 4a. The tops of the thick spacers 7 are also higher than the top of the gate layer 4a. As a result, the conductive layer 9a cannot extend beyond the edges of the gate layer 4a. Constraining or stressing a conductive layer 4a will increase the resistance undesirably.

The tops of the thin spacers in the gate electrode of Matsumoto et al., as shown in Figure 3, are approximately the same height as the top of the gate layer 4a. The tops of the second thick spacers 7a are also approximately the same height as the top of the gate layer 4a. However, the thick second spacers 7a do not have a flat upper surface. On the contrary, the upper surface of the thick second spacers 7a are severely rounded.

Claim 9 has been canceled.

The gate electrode of claims 10 – 14, as amended, are not anticipated by Ramaswami or Matsumoto et al. since claims 10 – 14 are dependent on claim 8.

In view of the foregoing, Applicant respectfully requests the Examiner to withdraw the rejections under 35 U.S.C. §102 (a) to claims 8, 10 – 14, as amended. Applicant believes that all claims pending are now in condition for allowance so such action is earnestly solicited at the earliest possible date.

If there are any additional charges, please charge Deposit Account No. 02-2666. If a telephone interview would in any way expedite the prosecution of this application, the Examiner is invited to contact the undersigned at (408) 720-8598.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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Michael A. Bernadicou

Reg. No. 35,934

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA 90025-1026
(408) 720-8300